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son in favor of this concession is, that it will be easier, at any future time, to have the objectionable proviso stricken out than to pass a copy-right bill. It must also be remembered that even without the proviso it would generally be to the advantage of the authors of widely circulated books both to employ an American house to introduce the book to the American market, and to manufacture the editions designed for this market in America. The adoption or rejection of the proviso is not, therefore, a matter of so much importance to our publishing interests as might at first sight appear. The parties most affected by it are new and comparatively unknown authors, who may find difficulty in securing an American publisher until the success of their works has been proved, when they may be reprinted without their consent, and writers of works the policy of reprinting which may be doubtful, owing either to their expense or their limited circulation. Among the works of this class we may include standard philosophical and scientific treatises. A work of this class might, in the judgment of some publisher, be worth stealing, while the author was vainly seeking a publisher who would pay him. In fact, if the author, from any cause whatever, fails to secure an American manufacturer and publisher who will bring his work out simultaneously with its appearance in his own country, he will be in the position of one trying to sell an article which any one is at liberty to steal from him. All these defects can, however, ultimately be cured, and we would much rather see almost any reasonable law on the subject enacted than have things left in their present condition.

6. — *The Theory of Political Economy*. By W. STANLEY JEYONS, M. A., Professor of Logic and Political Economy in Owens College, Manchester. London and New York. 1871. 8vo. pp. xvi, 627.

THERE are two very different standards by which we may judge such a work as this. The one is its relation to the most advanced thought and the most careful investigations relating to the subject which have been given to the world; the other is the position it occupies with respect to the average thought of the educated public. If we compare Professor Jevons's work with that of Cournot on the same subject, published more than thirty years ago, we cannot but admit that in fertility of method and elegance of treatment it falls far below it. But the latter can be understood only by an expert mathematician, and the number of those who are at the same time mathematicians and economists is too small even to perpetuate the knowledge of such a

work, so that even in this age Cournot has met the fate of the Atlantides. Hoping that he will be exhumed and his investigations continued by some future generation, let us examine the work before us by the light of the generally known political economy of the present.

Just now, when the claims of political economy to a place among the sciences are hotly disputed, when few, even of its professed cultivators, dare to claim it as an exact science, and when society is ready to brand as a doctrinaire every one who talks about applying its principles to the affairs of men, it requires no little courage to come before the world expressing its truths by mathematical formulæ. Holding that this mode of expression is now what political economy stands most in need of, we welcome every attempt to introduce it, and commend the work as showing that there certainly are truths of this science which admit of exact mathematical expression and reasoning. Still, it is only after repeated efforts, followed by careful criticism of each, that we can hope for success, and the work before us is well worthy of a critical examination.

The basis of the work is a theory of utility which may well supersede the old distinction of value in use and value in exchange. The utility of every article which we possess, or, rather, the utility of an increased supply of that article, diminishes with the quantity we have on hand, and vanishes when we have all we want to use. Take bread, for instance. One loaf a day is of very great utility to an individual; if he has nothing else to eat, it preserves him from starvation. A second loaf per day, if he can eat it, will also be useful, but far less so than the first one. If the two loaves satisfy his hunger, the addition of a third loaf will be of no utility whatever. Utility thus depending on the supply, it is possible to express the relation between the two by an algebraic equation, if we have the necessary data for forming this equation. These are the quantities of each kind of goods sold, and the price at which the sales are effected under various circumstances. From such data the equation is to be formed by induction.

Given this law of utility, a fundamental law of exchange follows at once. Whenever an exchange between two parties can be so effected that the utility of the commodities received shall, in the case of each party, be greater than the utility of the commodities given for them, an exchange will take place, and will continue until these utilities balance each other in the case of each party. This condition determines the quantities of both commodities exchanged, and hence the quantity of the one which will be given for a unit of the other which corresponds to price, or "ratio of exchange." From the same principle we can fix the laws of exchange of any number of commodities among any num-

ber of individuals. An interesting application of the law would be to find the quantity of each article which an individual with given wants and a given income would purchase. The necessary data being given the manner in which each dollar of his income would be spent, always supposing him to spend with perfect intelligence, would be a matter of mathematical deduction.

The theory of utility and exchange here described we regard as entirely correct in its results, so far as it can be applied to the actual circumstances of trade. But unless some modification be made in its form, it is of very limited application. In fact, the author himself cites one exception, which is so sweeping as to include nearly every case of domestic purchase. It is that in which the vendor has so small a desire for consuming his own commodity, that the very last minute portion of it has a less degree of utility to him than has the commodity he receives in exchange, so that he is quite ready to sell out his entire stock at the market rates. Now, this is just what nearly every trader is always ready to do; nay, he will offer a small premium to a purchaser who will buy all he has. When a stock of goods is kept on hand for sale, the utility of an individual unit to the holders cannot be properly regarded as depending on the amount they have on hand. It is true that, if the stock is small, it will sell at a higher price per unit, and thus the indirect utility to the holder will be greater; but this indirect utility does not enter among the data; on the contrary, it is the very thing which is to be determined by the equations.

This naturally leads to another inquiry: whether the data required will not in many cases, perhaps in all cases, be more difficult to obtain than will the results. The utility of the commodity to the producer or holder is among the data. We may hope to learn the law of utility of wheat to the farmer, and of a house to the carpenter. But how shall we learn the utility of ships to an importer or ship-carpenter, of bank stock to a capitalist, of horse-shoes to a farrier, or of railways to an engineer? Apart from this, is it not rather unsatisfactory to found a science upon a set of equations which shall hold true or fail according as the producer of a commodity does or does not keep an infinitesimal amount of it for his own use? The fact is, that our author has laid a foundation for us, but has not built upon it himself, nor shown us how to do so. His theory of utility is very valuable as enabling us to understand what we see in the commercial world, but it does not furnish sufficient means of investigating it. We cannot get at the law of utility *a priori*; we must proceed by induction. The law of utility is in fact nothing more than a law of prices, and we can learn it only by observation. Although the equations of exchange

are true in the few cases to which they apply, they are seldom those which should actually be used for the purpose of deduction. When we come to apply them to any concrete case, we apprehend that the utility of the commodity to the seller or producer will disappear from the equations altogether, and the relation will appear as one between the conditions of production on the one side, and the utility of the commodity to the purchaser on the other. Since the latter can be determined only by induction, we shall finally have nothing left but relations between quantities, prices, and conditions of production and consumption.

That this is really the proper way of considering the subject seems to be shown by the chapter on Labor. We there find the amount of labor expressed by an equation between its disagreeableness and the utility of its product to the laborer. But, when the attempt is made to compare the price or "ratio of exchange" with the cost of production, the common middle term expressing the utility of the product to the producer, which enters the equations both of labor and exchange, disappears entirely from the result. The latter is true even in the large class of cases where the term in question has no existence, and we therefore think it should be omitted entirely.

Mr. Jevons's idea seems to have been to found a calculus of pleasure and pain, — an idea which we cannot conceive to have any sound philosophical basis. He encourages himself by the inquiry, "Previous to the time of Pascal, who would have thought of measuring doubt and belief?" We might retort by inquiring, Who thinks of doing so now? Certainly not the philosophical mathematician. He does submit to calculation certain conditions on which belief depends, or ought logically to depend, but not the belief itself. A calculus like that proposed must be subject to the same limitation. We may make the acts of man undertaken with a view of gaining pleasure and avoiding pain the subject of a calculus, but this can hardly be considered as measuring pleasure and pain themselves.

In laying the foundations for his science, our author frequently finds himself at variance with the opinions of economists in general. In nearly every such instance the views he combats seem to us stronger than those he substitutes. It is in his ideas of capital that he is most radically at variance with others, and to this we may devote some consideration. The accumulated wealth of a people is commonly considered as divisible into two parts, of which one is capital and the other is not. Mr. Jevons seems to recognize a distinction, but his classification leads to a result that is directly the opposite of that commonly admitted. He defines capital as "the aggregate of those com-

modities which are required for sustaining laborers of any kind or class engaged in work"; and again, "the current means of sustenance constitute capital in its free or uninvested form." Since nearly all men are laborers of some kind, either with mind or body, and since the few who are not laborers require about the same articles for their sustenance with those who are, we do not see why the human race might not be substituted for laborers in the above definition. "Sustenance" is commonly supposed to mean food only, but this would make capital cover a very limited field. We learn, however, from the context, that houses, clothing, utensils, and furniture are included. This shows that a liberal extension is given to the meaning of the word "requisite"; indeed, economists have long since given up the attempt to draw the line between things requisite and things which are not. We take it, therefore, that our author means by capital any article fitted to supply any human want; and since mankind labor only to supply their wants, capital includes all the products of labor. If there is any exception to this sweeping construction, it is that mills, railways, and other things commonly considered capital are excluded; the railway is not capital, "but capital is fixed in the railway." We are, indeed, somewhat in doubt whether we have correctly apprehended the author's meaning, but we have given the best conclusions we can draw from what he says. Such a view of capital is tantamount to abolishing the distinction between it and other wealth, — a distinction which we regard as among the most important in political economy. With so high an authority as our author, ignoring, or at least not correctly apprehending, so important a question, we may be excused for entering into some elementary considerations on the subject.

Let us imagine a large community living in a state of isolation, and unable to supply itself with any kind of machinery. Its members are, in consequence, obliged to make their cloth by the hand-loom. Thus burdened, they are able only to supply their current wants, and so never increase in wealth, or gain any better means of producing cloth. At length some member of this community comes into possession of a fortune. To meet Mr. Jevons's ideas in the best way, we may suppose that he receives this fortune in the form of food and clothing in sufficient quantity to supply a number of men for a year; in fact, that he is now able to command the services of his fellows to an important extent. There are two distinct channels into which he may direct these services. In the first place, he may employ them in building him a fine house, and supplying him with carpets, furniture, pictures, and wines. Thus his own means of enjoyment will be materially increased. But his neighbors will be none the better off for his fortune, since the full

equivalent of all he gives them he takes from them in the shape of labor. In the next place, he may employ his men in building a factory, by the aid of which a cheaper and more abundant supply of clothing will be furnished the whole community, while at the same time the mill will yield him an annual profit from the sale of its products.

That there is an essential difference between these two modes of employing wealth, in respect of their influence on the future welfare of the community, is an obvious truth, and one which all the economists of note have seen; but when they have sought to generalize the difference by a definition, they have always failed in doing it in a way which would not in special cases lead to some real or seeming paradox. One of these is noticed by Mr. Jevons. Where two people live in their own houses, these are not, according to present opinion, capital; if they find it convenient to exchange houses and pay rent each to the other, the houses are capital. But we conceive that all difficulties may be avoided by a slight modification of the definitions of Adam Smith himself. We have simply to consider the capital of a country as that portion of its wealth which is employed for the purpose of gaining an increased product with the same amount of labor, this increased product constituting the profit. In the case just supposed, the excess of cloth produced by the factory over that produced by the spinning-wheel, with the same amount of labor, constitutes the profit. If there is no such excess, the factory can pay no dividends. Coming down to individuals, the capital of an individual consists of all that portion of his wealth from the present enjoyment of which he is abstaining for the sake of a future profit. This introduces the paradox that the national capital is far less than the sum of the capitals of individuals. To avoid it, we have only to introduce the mathematical idea of negative capital, comprising that wealth for the enjoyment of which one is paying interest to the owner. Then, when the people exchange houses, the latter become positive capital to their owners, and negative capital to their occupants, thus balancing each other in any sum total which includes both.

While we find much to dissent from in Mr. Jevons's work, we conceive that the distinguished author can render no more important service to social science than that which will result from the continuance of his researches. We should, therefore, be pleased to see his method developed and applied with greater fulness and perspicuity, and to find the results obtained by his predecessors incorporated with his own.